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ABSTRACT

The superintendent of the Johnson City Public Schools, Tennessee, requested a survey of the physical status of the 10 elementary schools, 1 junior high school, and 1 high school in the district. Onsite investigations were made to gather data with special attention given to site characteristics, amount and use of functional space, and strengths and weaknesses of the facility. Based on the data collected, recommendations were made regarding repairs and/or modifications that should be made for each plant. The completed physical feasibility document was presented in spring 1984 to the board of education to serve as a basis for long-range decisions and to enable administrators to make basic daily maintenance decisions with a better understanding of systemwide needs. The board chose to reduce some of the population pressure on the elementary schools and to provide a strong educational program by changing the grade structure to K-5, 6-8, 9-12. The present high school plant is to be expanded rather than moving the high school to the existing junior high facility. Two tables summarize data on existing school physical facilities and on preliminary space needs and cost estimates for the middle school transition. Two figures depict the phases and final results of the change and geographical considerations resulting from the board's decision. (MLF)

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REFORM AND RENEWAL OF PHYSICAL FACILITIES IN A SELECTED TENNESSEE SCHOOL SYSTEM

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REFORM AND RENEWAL OF PHYSICAL FACILITIES IN A SELECTE Γ TENNESSEE SCHOOL SYSTEM

INTRODUCTION

The Superintendent of the Johnson City, Tennessee School System became concerned about the physical status of the ten elementary schools (grades K-6), one junior high school (grades 7-9), and one high school (grades 10-12). No long-range plans were in effect in regard to these facilities; therefore, he arranged a meeting with a group of East Tennessee State University consultants to discuss preliminary steps in implementing a physical facilities survey project.

As a result of the meeting in the Fall of 1983, the writer and a local architect made on-site investigations of each of the twelve school plants to gather data. Table 1 contains a summary of some of the collected data. In addition to the items listed in the table, attention was given to site characteristics, amount and use of functional space, and strengths and weaknesses of the facility. Based on the data collected, recommendations were made regarding repairs and/or modifications that should be made for each plant if it were to remain in operation and function effectively.

The principals of the schools were interviewed to obtain their input regarding the most favorable course for the school system to pursue toward the end of this century. These sessions also provided

TABLE 1

EXISTING SCHOOL PHYSICAL FACILITIES

School	Grade	Date Constructed	Additions*	Total Number Classrooms	Average Classroom Size (sq. ft.)	Site Size (Acres)	Deficiencies
South Side	(K-6)	1917	1924 1937 1959 1975	16	632	2.3	Structural deterioration. Inadequate Site (Playground area and parking).
Stratton	(K-6)	1930	1950 1967 1972	22	738	6.1**	Excessive Noise. Inadequate loading area.
Henry Johnson	(K-6)	1930	1952	19	768	3.4	Excessive Noise.
Columbus Powell***	(K-6)	1930	1959	11	683	2.6	Inadequate site (playground and parking).
Keystone	(K-6)	1937	1952	25	789	2.8	Inadequate site (playground and parking).
King Springs	(K-6)	1948	1954	14	719	6.1	Inadequate improved parking.
Cherokee	(K-6)	1950	1957	12	794	9.7	No library in main structure.
Fairmont	(K-6)	1958	1963	13	800	12	Too few classrooms. Undersize dining area.
Science Hill	(10-12)	1961	1968	53	827	40	Heating/Cooling System Insultation of buildings.
Towne Acres	(K-6)	1966	1974	16	1000	10.5	Inadequate storage.
Liberty Bell	(7-9)	1973	None	63	864	50	Adequacy of common use building and PE facility marginal for number of students
North Side	(K-6)	1984	None	15	850	2.8	Inadequate site

* Portable classrooms not included ** Including Jaycee Park *** Columbus Powell closed 1984 as recommended

the investigators with insight into the present program and determined the authenticity of the collected data.

EMPIRICAL RESEARCH

The completed physical feasibility document was presented in the Spring of 1984 to the Johnson City Board of Education. The primary purpose of the document was to serve as a basis for long-range decisions. By using the results of the study, the Board and Superintendent could better understand the effect a particular decision would have in relation to school physical facilities. A secondary purpose of the 180-page report was to enable administrators to make basic daily maintenance decisions with a better understanding of system-wide needs.

Demands to be placed on the school system through the year 1989 and also through the year 2000 were projected. Goals for the system included the following:

to plan for physical enviroments that were safe and conducive for teaching and learning;

to achieve maximum utilization of existing facilities;

to justify future expenditures for renovation, remodeling, and expansion of school plants;

to plan for a systematic phasing out of antiquated structures.

The investigators called attention to several factors that should be considered in future facilities planning. Schools should be of an efficient size in order to merit full-time principals with a state-supported salary. An elementary school should have an average daily attendance of at least 375 students to meet this criterion. Only three of the ten elementary schools had an enrollment above 375 during

the school year of 1983-84. Wood in the structures of some existing buildings as well as small classrooms present serious problems.

Three options emanating from the study were presented to the members of the Board of Education. Option 1 focused on the elementary physical facilities. Under this option the grade structure (K-6, 7-9, 10-12) would remain unchanged. Option 2 would reduce some of the population pressure on the elementary schools by changing the grade structure to (K-5, 6-8, 9-12). Two alternatives for exercising this option were cited. The existing high school could be expanded to accommodate the additional students in grade nine, or the high school could occupy the present junior high plant (which is larger) and the new middle school could be assigned to the present high school. Option 3 was similar to Option 2, except that the grade structure would be K-4, 5-8, and 9-12.

The members of the board approved Option 2 as outlined in Figure 1. They chose the alternative of expanding the present high school plant rather than moving the high school to the existing junior high facility. This choice was based upon the design of the two school plants in relation to the educational program to be offered. After much deliberation and study, the Board decided that the grade structure in Option 2 provided the strongest educational program. Thus the die was cast for movement into the middle school concept.

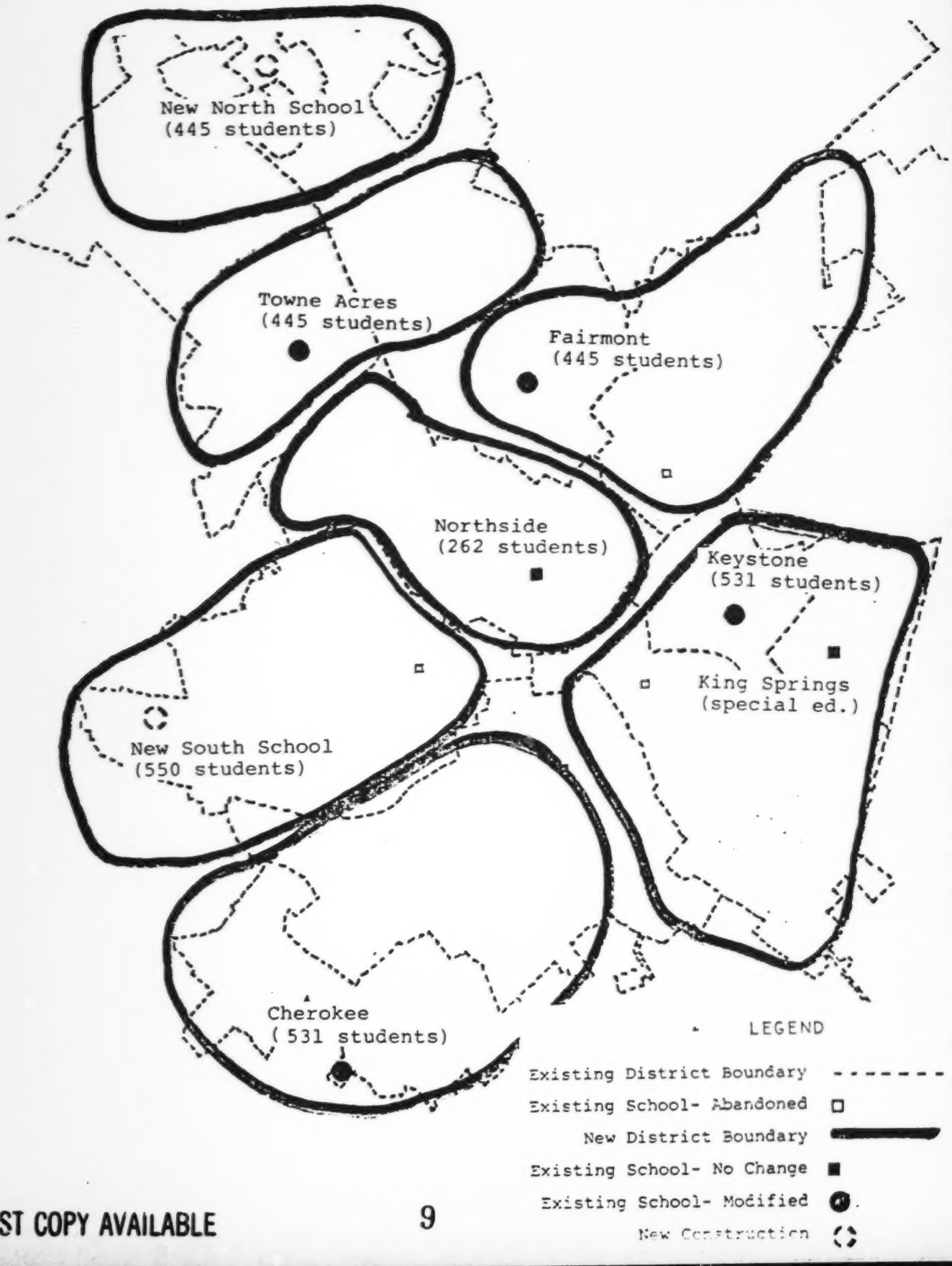
Figure 2 depicts geographical considerations resulting from the board's decision. By the year 2000, the Southern Tier of the system would contain two existing elementary schools, one new elementary school, and one special education school. The Central Tier would

Figure 1

OPTION 2

Tier	Alternative Actions		Final Results
	Phase 1	Phase 2	
Southern Tier	Expand Cherokee. Expand Keystone. Close Southside. Special Education to King Springs.	Build a new South school. Close Henry Johnson.	2 existing schools. 1 new school 1 special education school.
Central Tier	No change at North Side.	No change at North Side.	1 existing school.
Northern Tier	Expand Fairmont.	Expand Towne Acres. Build a new North school.	2 existing schools. 1 new school.
Middle & High School	Expand Science Hill to accommodate grades 9-12. Maintain Liberty Bell to accommodate middle school (grades 6-8).		

Figure 2
OPTION 2



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consist of one existing elementary school and the Northern Tier would be comprised of two existing elementary schools and one new elementary school. The enrollment for these elementary schools is projected to be 3,210 while the enrollment for the middle school and high school will be 1,425 and 1,794, respectively.

IMPLEMENTATION

In order to improve the efficiency of the school system as soon as possible, the investigators recommended that Columbus Powell Elementary School be closed at the beginning of the next school year and the building be renovated for use as a Central Office. This is not shown in Figure 1 because action was recommended to occur prior to implementation of Phase 1 of Option 2. Consequently, the school was closed and the building converted at a cost of $164,197. Open House for the new Central Office was conducted in May 1986. This is the first time in the history of the school system that the Central Office has been allocated space specifically designed to accommodate the functions of personnel. Today's market appraisal of this structure is $1,091,000, excluding land and furnishings.

Consultants, architects, Board members, and administrators became involved in the effort to determine costs of the approved project. Estimates were presented to the Johnson City Commissioners in the Spring of 1985. The cost of construction to the existing high school that would permit the movement of the ninth grade to that facility was estimated at $1,900,000. In addition, a new heating/cooling system with improvements in insultation of the building was proposed for

the existing high school at a cost of $1,218,000. The Commissioners did not approve this project.

During the Fall of 1985, the construction plans and cost estimates were revised as shown in Table 2. In the Spring of 1986, the project was again presented to the City Commissioners. No action was taken at that meeting; however, the project was approved at a subsequent meeting along with a time schedule for implementation. The replacement of the heating/cooling system and the improvement in building insulation were scheduled for the summer of 1986. That part of the work has been completed at a cost of $1,184,799. The funds for the new construction at the high school will be allocated for the school year 1987-88. Barring unforseen difficulties, the Johnson City School System will implement the middle school program in school year 1988-89.

The Board of Education has not yet taken action regarding the other components of Option 2. The physical facilities survey can, however, serve as a guide for future decisions.

PRELIMINARY SPACE NEEDS AND COST ESTIMATES:

JOHNSON CITY MIDDLE SCHOOL TRANSITION: 9th Grade moves from Liberty Bell to Science Hill High School.

1.	New Academic Classroom Space	
	Area: 19,120 S.F. at $45.00/S.F.	$860,000.00
	Add 10% for Furnishings	86,000.00
2.	New Athletic Dressing Rooms	
	Area: 4,200 S.F. at $60.00/S.F.	252,000.00
	Add 5% for Equipment/Furnishings	12,000.00
3.	Training Room	
	Area: 1,200 S.F. at $40.00/S.F.	48,000.00
4.	Renovate Existing Boys Athletic Dressing Rooms for Physical Education	
	Area: 2,400 S.F. at $12,00/S.F.	29,000.00
5.	New Administrative Space	
	Area: 450 S.F. at $40.00/S.F.	18,000.00
6.	Renovate Existing Administrative Area	
	Area: 3,000 S.F. at $9.00/S.F.	27,000.00
7.	New Kitchen Space	
	Area: 400 S.F. at $80.00/S.F.	32,000.00
8.	Renovate Existing Kitchen Space	
	Area: 2,350 S.F. at $45.00/S.F.	106,000.00
9.	New Kitchen Equipment	80.00.00
10.	Add to Existing Cafeteria	
	Area: 1,520 S.F. at $45,00/S.F.	68,000.00
11.	Sub-Total	$1,618,000.00
12.	A/E Fees at 5% (Exclude Furnishings)	76,000.00
13.	Design Contingency for Entire Project	50,000.00
14.	Total	$1,744,000.00

NOTE: No cost is included for a covered walk from Science Hill to the Vocational School. Installation could be handled by School System.

NOTE: Two existing classrooms will require renovation into Science Classrooms. All utilities (gas, water, etc.) are already piped to these spaces. Equipment purchasing and installation could be handled by the School System.

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